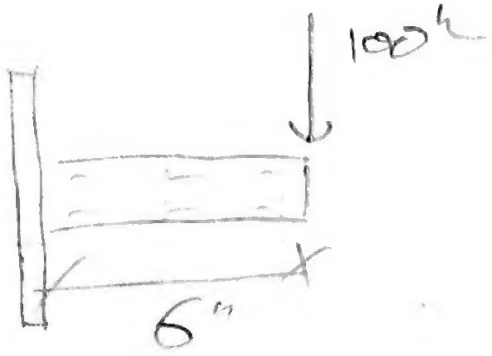
ECCENTRIC WELDS -1



$M_u = 600$ k-in

$$I_x = \frac{2 \times \ell^3}{12} + 2 \times \ell d^2 =$$

$$\frac{2 \times 8^3}{12} + 2 \times 4 \times 4^2 = 213 \text{ in}^3$$

$f_V = 100^k / 24" = 4.2^k/\text{in}$

COULD HAVE USED M/S

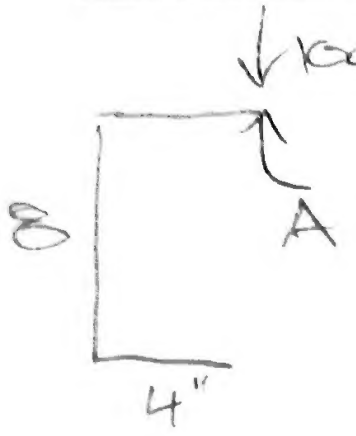
$$f_H = \frac{Mc}{I} = \frac{600 \times 4"}{213} = 11.2^k/\text{in}$$

$$f_{RT} = \sqrt{4.2^2 + 11.2^2} = 11.9^k/\text{in}$$

$11.9 = 1.392 D\ell$ $\quad \ell = 1"$

$D = 8.5 \rightarrow 9$ $\quad$ 9/16" FILLET.

ECCENTRIC WELDS -2



$$CG_x = \frac{4" \times 2 \times 2" + 8" \times 1 \times 0"}{8" + 4" + 4"}$$

$$CG_x = 1"$$

$$M_v = 100^k \times 8" = 300 \text{ k-in}$$

$$I_p = I_x + I_y$$

$$I_x = \frac{8^3}{12} + 4" \times 2 \times 4^2 = 171 \text{ in}^3$$

$$I_y = \frac{2 \times 4^3}{12} + 4 \times 1^2 \times 2 + 8 \times 1^2 = 27 \text{in}^3$$

$$I_p = 171 + 27 = 198 \text{ in}^3$$

$$f_v = 100^k / 16" + \frac{Mh}{I}$$

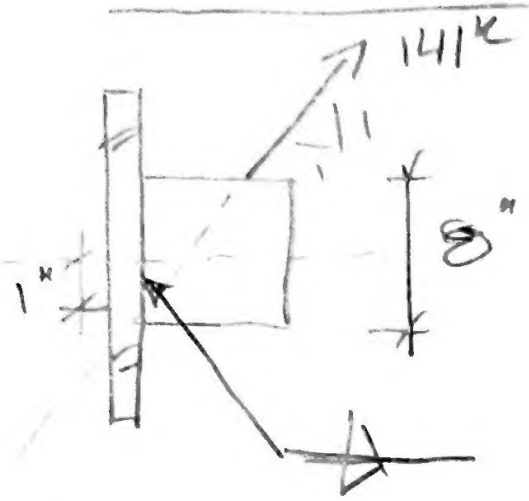
$$100/16 + 300 \times 3" / 198 = 10.8 \text{ k/in}$$

$$f_H = \frac{Mv}{I} = \frac{300 \times 4"}{198} = 6.1 \text{ k/in}$$

$$f_{res} = \sqrt{10.8^2 + 6.1^2} = 12.4 \text{ k/in}$$

$12.4 = 1.392 D \times 2$ $D = 8$ $9/16"$ FILLET

ECCENTRIC WELDS - 3



$P_V = 100^k$ $\quad M_{@} = 100^k \times 1" = 100 k\text{-}in$

$P_H = 100^k$

$S_{WELD} = 2 \times d^2/6 = 2 \times 8^2/6 = 21.3$

$f_V = 100^k/16 = 6.25\ k/in$

$f_H = 100^k/16 + M/S$

$f_H = 100/16 + 100/21.3 = 10.9\ k/in$

$f_{TOT} = \sqrt{6.25^2 + 10.9^2} = 12.4\ k/in$

$12.4 = 1.392 D\ell$

$D = .89 \Rightarrow 9/16^{th}$ WELD